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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,182	12/20/2001	Frank Gasparik	00-460/1C	9668

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EXAMINER	
CHANG, JOSEPH	
ART UNIT	**PAPER NUMBER**
2817	

DATE MAILED: 05/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/027,182	GASPARIK, FRANK	
	Examiner	Art Unit	
	Joseph Chang	2817	

-- The MAILING DATE of this communication appears on the cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-21 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 20 December 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bereza US 5,801,578 in view of Kuo US 5,646,563.

Bereza disclose a charge pump circuit in figure 2 comprising complementary P- and N-channel (218, 214) charge pump devices including a current source (202) for providing a gate-to-source bias for the P- and N-channel charge pump devices, a first differential pair (224,226) of pass-gate devices suitable for isolating the P-channel charge pump device from supply and ground transients in the mixed signal integrated circuit ("power supply noise rejection is improved" in Abstract) and a second differential pair (230, 228) of pass-gate devices suitable for isolating the P-channel charge pump device from supply and ground transients in the mixed signal integrated circuit ("power supply noise rejection is improved" in Abstract). Bereza further discloses that his charge pump circuit is used in a conventional PLL including a VCO and a phase detector (col.2 line 53-54. it is noted that PLL circuits are obviously suitable for use in a mixed signal integrated circuit, the mixed signal includes pulse trains, noise on the power supply rails and current spikes and analog signal from VCO). However, Bereza does not explicitly disclose that the current source 202 is constant current generator.

Kuo discloses a charge pump with a constant current generator (constant current source 340) and further teaches that "fluctuation in supply voltage Vdd and reference voltage Vss are commonly caused by changing current" (col.4 line 30-33), and such fluctuation vary the gat-source voltages for charge pump devices and cause amplified fluctuations in output voltage (col.2 , lines 24-27), thus, the constant current generator provides not only constant current to the charge pump but also diminishes fluctuation in supply voltage because the current is constant.

Accordingly, It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a constant current source, as taught by Kuo, for the current source 202 of Bereza for the purpose of obtaining constant current to minimize fluctuation in supply voltages (that is "a high power supply rejection for the P- and N-channel charge pump devices" in claims 2, 9, 16).

Regarding claim 3, 10 and 17, Kuo shows Constant Current Source 340 P- and N- channel bias devices (current mirrors 366, 344).

Regarding claim 4, 11 and 18, the constant current source 340 provides the P- and N- channel charge pump devices a substantially constant current.

Regarding claim 5, 12, 19, the limitation in this claim is inherent property of a phase detector.

Regarding claim 6, 13 and 20, it is inherent that FET has P- or N- channel that has resistance.

Regarding claim 7, 14 and 21, Current of the constant current source is known to generally be programmable if known gain control was incorporated.

Regarding preamble "a phase-locked loop circuit" and "mixed signal integrated circuit", it should be noted that they merely recite an intended use by reciting the charge pump circuit be used. Therefore, these recitations have been given no patentable weight in the application of the above rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rhee et al. 6,160,432 discloses a source switched or gate-switched charge pump having cascoded output.

Sano discloses a charge pump using a constant current.

Harada et al. discloses a charge pump using two constant current sources.

Takagi et al. discloses a change pump using constant current source.

Luich et al. discloses a cascode switched charge pump circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Chang whose telephone number is (703) 308-4800. The examiner can normally be reached on Mon-Thur 0630-1700.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7722 for After Final communications.
In addition, the official TC2800 RightFAX numbers are:

TC2800 Official Before-Final RightFAX - (703) 872-9318

TC2800 Official After-Final RightFAX - (703) 872-9319

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These RightFAX numbers provide the fax sender with an auto-reply fax verifying receipt of their fax by the USPTO.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JC
May 8, 2003

Robert Pascal
Supervisory Patent Examiner
Technology Center 2800